Chapter 5:

HACCP — Total Process Prevention

Estimated training time:

120 minutes

Educational objectives:

In this chapter, trainees will learn to...

- Identify *key phases* and *critical control points* in the food preparation process.
- Identify *methods of preventing problems* during each phase of the process.

Presentation outline:

There are 37 teaching aids to use with this chapter. Two are case studies, six are group activities, one is a demonstration, and the rest are visuals which you can use with overhead projectors or copy and hand out.

The teaching aids for this chapter are listed on pages 139-140.

• What is HACCP?

VISUAL OR HANDOUT: Use Teaching Aid 5.1, "What Is HACCP?"

TEXT: The Hazard Analysis and Critical Control Point (HACCP) system monitors the food service process to reduce the risk of foodborne illness. HACCP focuses on how food flows through the process — from purchasing through serving.

At each step in the food preparation process, there are a variety of potential hazards. HACCP provides managers with *a framework* for implementing control procedures for each hazard.

It does this through the identification of *critical control points* (or CCPs). These are prevention points in the process where bacteria or other harmful organisms may grow or food may be contaminated with other physical or chemical hazards.

TEXT: HACCP divides the food service process into several key steps:

1. Purchasing
2. Receiving
3. Storing
4. Preparing
5. Cooking
6. Serving and holding
7. Cooling
8. Reheating

We'll look at preventative measures for each step.

VISUAL OR HANDOUT: Use Teaching Aid 5.2, "Steps in the Food Service Process."

ACTIVITY: Use Teaching Aid 5.3, "Tracking a Food Through HACCP." This is a group activity.

• Step 1: Purchasing

VISUAL OR HANDOUT:

Use Teaching Aid 5.4, "Purchasing."

TEXT:

The goal of purchasing is to obtain wholesome, safe foods to meet your menu requirements. Safety at this step is primarily the responsibility of your vendors. It's your job to choose your vendors wisely.

> Suppliers must meet federal and state health standards. They should use the HACCP system in their operations and train their employees in sanitation.
>
> Delivery trucks should have adequate refrigeration and freezer units, and foods should be packaged in protective, leak-proof, durable packaging.

Let vendors know up front what you expect from them. Put food safety standards in your purchase specification agreement. Ask to see their most recent board of health sanitation reports, and tell them you will be inspecting trucks on a quarterly basis.

Good vendors will cooperate with your inspections and should adjust their delivery schedules to avoid your busy periods so that incoming foods can be received and inspected properly.

ACTIVITY:

Use Teaching Aid 5.5, "Examining a Purchase Order." This is a group activity.

• Step 2: Receiving

TEXT: The goals of receiving are: (1) to make sure foods are fresh and safe when they enter your facility and (2) to transfer them to proper storage as quickly as possible.

ACTIVITY: Use Teaching Aids 5.6 and 5.6a, "Safe In, Safe Out" to do a case study. See Teaching Aid 5.6 for instructions; use Teaching 5.6a as a visual or handout for the class to follow along.

TEXT: Let's look more closely at two important parts of receiving:

- first, *getting ready* to receive food
- and, second, *inspecting the food* when the delivery truck arrives.

VISUAL OR HANDOUT: Use Teaching Aid 5.7, "Guidelines for Receiving."

TEXT: **There are several important guidelines to keep in mind as you get ready to receive food.**

Make sure your receiving area is equipped with sanitary carts for transporting goods.

Plan ahead for deliveries to ensure sufficient refrigerator and freezer space.

Mark all items for storage with the date of arrival or the "use-by" date.

Keep the receiving area well lit and clean to discourage pests.

Remove empty containers and packing material immediately to a separate trash area.

Keep all flooring clean of food particles and debris.

When the delivery truck arrives, make sure it looks and smells clean and is equipped with the proper food storage equipment. Then, inspect foods immediately upon delivery:

Check expiration dates of milk, eggs, and other perishable goods.

Make sure shelf-life dates have not expired.

Make sure frozen foods are in air-tight, moisture-proof wrappings.

Reject foods that have been thawed and refrozen. Look for signs of thawing and refreezing such as large crystals, solid areas of ice, or excessive ice in containers.

Reject cans that have any of the following: swollen sides or ends; flawed seals or seams; dents or rust. Also reject any cans whose contents are foamy or bad-smelling.

Check temperature of refrigerated and frozen foods, as well as eggs and dairy products, fresh meat, fish, and poultry products.

Look for content damage and insect infestations.

Reject dairy, bakery, and other foods delivered in flats or crates that are dirty.

VISUAL OR HANDOUT:

Use the following Teaching Aids: 5.8, "Judging Meat and Poultry"; 5.8a, "Judging Eggs and Dairy Products"; 5.8b, "Judging Specific Dairy Products"; 5.9, "Judging Fresh and Frozen Foods"; 5.9a, "Judging Canned and Dry Foods"; and 5.10, "Checking Temperatures of Specially Packaged Foods."

ACTIVITY:

Use Teaching Aid 5.11, "Real Life Receiving." This is a group activity. (If appropriate to your operation, also use Teaching Aid 5.12, "Off-Site Feeding.")

TEXT:

What about transporting and receiving food for off-site feeding?

Although transporting prepared food from a central kitchen to remote sites is not officially part of the HACCP process, it is indeed a critical control point for many food service establishments.

Special care must be taken to ensure that food that is safe when it leaves the central kitchen is *still* safe when it is served.

Be sure to...

(1) **Use proper transportation.**

Use only carriers approved by NSF *International* (NSFI) for transporting food. Sanitize carriers daily.

Make sure the insulating properties are working. Trucks should be equipped with facilities designed to keep hot foods hot (above 140°F) and cold foods cold (below 40°F).

(2) **Use proper food containers.**

Food containers should be:

- rigid and sectioned, so foods don't mix
- tightly closed to retain heat or cold
- non-porous to avoid leakage
- easy to clean or disposable
- approved to hold food

It is a good idea to transport an extra sample of hot and cold foods in order to test their temperatures on arrival and to have a 48-hour sample of potentially hazardous food. Be ready to store food immediately upon arrival.

• Step 3: Storing

VISUAL OR HANDOUT: Use Teaching Aid 5.13, "Ways to Store Food."

TEXT: In general, there are four possible ways to store food:

1. In dry storage, for longer holding of less perishable items.
2. In refrigeration, for short-term storage of perishable items.
3. In specially designed deep-chilling units for short periods.
4. In a freezer, for longer term storage of perishable foods.

Each type of storage has its own sanitation and safety requirements. Let's look at each.

Dry Storage

VISUAL OR HANDOUT: Use Teaching Aid 5.14, "Guidelines for Dry Storage."

TEXT: There are many items that can be safely held in a sanitary storeroom.

These include, for example: canned goods, baking supplies (such as salt and sugar), grain products (such as rice and cereals), and other dry items.

In addition, some fruits (such as bananas, avocados, and pears) ripen best at room temperature. Vegetables such as onions, potatoes, and tomatoes also store best in dry storage.

A dry storage room should be clean and orderly, with good ventilation to control temperature and humidity and retard the growth of bacteria and mold. Keep in mind the following:

- For maximum shelf life, dry foods should be held at 50°F, but 60°F to 70°F is adequate for most products. Use a wall thermometer to check the temperature of your dry storage facility regularly.
- To ensure freshness, store opened items in tightly covered containers. Use the "First In, First Out" (FIFO) rotation method, dating packages and placing incoming supplies in the back so that older supplies will be used first.
- To avoid pest infestation and cross-contamination, clean up all spills immediately and do not store trash or garbage cans in food storage areas.
- Do not place any items, including paper products, on the floor. Make sure the bottom shelf of the dry storage room is at least 6 inches above the ground.
- TO AVOID CONTAMINATION... *Never* use or store cleaning materials or other chemicals where they might contaminate foods! Store them with labels in their own section in the storeroom away from all food supplies.

Refrigerated Storage

VISUAL OR HANDOUT: Use Teaching Aid 5.15, "Guidelines for Refrigeration."

TEXT:

Keep in the refrigerator at internal temperatures of below 40°F: fresh meat; poultry; seafood; dairy products; most fresh fruit and vegetables; and leftovers from cooked, cooled foods.

Although no food can last forever, refrigeration increases the shelf life of most products. Most importantly, because refrigeration slows bacterial growth, *the colder* a food is, *the safer* it is.

Your refrigeration unit should contain open, slotted shelving to allow cold air to circulate around food. Do not line shelves with foil or paper. Also do not overload the refrigerator, and be sure to leave space between items to further improve air circulation.

All refrigerated foods should be dated and properly sealed. In addition:

- Use clean, non-absorbent, covered containers that are approved for food storage.
- Store dairy products separately from foods with strong odors like onions, cabbage, and seafood.
- To avoid cross-contamination, store raw or uncooked food away from and below prepared or ready-to-eat food.
- Never allow fluids from raw poultry, fish, or meat to come into contact with other foods.

Keeping potentially hazardous items at *the proper temperature* is a key factor in preventing foodborne illness. Check the temperature of your refrigeration unit regularly to make sure it stays below 40°F. Keep in mind that opening and closing the refrigerator door too often can affect temperature.

Many commercial refrigerators are equipped with externally mounted or built-in thermometers. These are convenient when working, but it is important to have a backup.

It's a good idea to have several thermometers in different parts of the refrigerator to ensure consistent temperature and accuracy of instruments. Record the temperature of each refrigerator on a chart, preferably once a day.

Deep Chilling

VISUAL OR HANDOUT: Use Teaching Aid 5.16, "Keeping It Colder."

TEXT: Deep or super chilling — that is, storing foods at temperatures between 26°F and 32°F — has been found to decrease bacterial growth.

This method can be used to increase the shelf life of fresh foods such as poultry, meat, seafood, and other protein items without compromising their quality by freezing.

You can deep chill foods in specially designed units or in a refrigerator set to deep chilling temperature.

Frozen Storage

Frozen meats, poultry, seafood, fruits and vegetables, and some dairy products, such as ice cream, should be stored in a freezer at 0°F to keep them fresh and safe for an extended period of time.

As a rule, you should use your freezer primarily to store foods that are *frozen when you receive them*. Freezing refrigerated foods can damage the quality of perishable items.

It's important to store frozen foods immediately. It's also important to remember that storing foods in the freezer for too long increases the likelihood of contamination and spoilage.

Like your refrigeration unit, the freezer should allow cold air to circulate around foods easily.

Be sure to:

- Store frozen foods in moisture-proof material or containers to minimize loss of flavor, as well as discoloration, dehydration, and odor absorption.
- Monitor temperature regularly, using several thermometers to ensure accuracy and consistent temperatures. Record temperatures of each freezer on a chart.
- Remember that frequently opening and closing the freezer's door can raise the temperature. So can placing warm foods in the freezer.
- To minimize heat gain, open freezer doors only when necessary and remove as many items at one time as possible. You can also use a freezer "cold curtain" to help guard against heat gain.

ACTIVITY: Use Teaching Aid 5.17, "Inspector for a Day." This is a group activity.

• Step 4: Preparing

TEXT: Now let's look at the next critical point in the HACCP process: preparing. We'll begin with thawing and marinating, then move on to special cautions for preparing cold foods.

VISUAL OR HANDOUT: Use Teaching Aid 5.18, "Thawing and Marinating."

Thawing and Marinating

TEXT: Freezing food keeps most bacteria from multiplying, but it does *not* kill them. Bacteria that are present when food is removed from the freezer may multiply rapidly if thawed at room temperature.

Thus, it is *critical* to thaw foods OUT of the "temperature danger zone." NEVER thaw foods on a counter or in any other non-refrigerated area!

Some foods, such as frozen vegetables, pre-formed hamburger patties, and chicken nuggets, can be cooked from the frozen state. It is important to note, however, that this method depends on the *size* of the item. For example, it is *not* recommended for large foods like a 20-pound turkey.

The two best methods for thawing foods are:

- In refrigeration at a temperature below 40°F, placed in a pan on the lowest shelf so juices cannot drip on other foods.
- Under clean, drinkable running water at a temperature of 70°F or less for no more than 2 hours or just until the product is thawed.

ALWAYS marinate meat, fish, and poultry in the refrigerator; NEVER at room temperature. And NEVER save and reuse marinade.

With all methods, be careful not to cross-contaminate!

Cautions for Cold Foods

VISUAL OR HANDOUT: Use Teaching Aid 5.19, "Cautions for Cold Foods."

TEXT: When you are preparing cold foods, you are at one of the most hazardous points in the food preparation process. There are two key reasons for this:

First, because cold food preparation usually takes place at room temperature.

Second, because it is one of the most common points of contamination and cross-contamination.

Chicken salad, tuna salad, potato salad with eggs, and other protein-rich salads are common sources of foodborne illness. Sandwiches prepared in advance and held unrefrigerated are also dangerous.

Because cold foods such as these receive no further cooking, it is essential that all ingredients used in them are properly cleaned, prepared, and, where applicable, cooked. It is a good idea to chill meats and other ingredients and combine them while chilled.

Here are several other important precautions to keep in mind:

Prepare foods no further in advance than necessary.

Prepare foods in small batches and place in cold storage immediately. This will prevent holding food too long in the "temperature danger zone."

Always hold prepared cold foods below 40°F.

Wash fresh fruits and vegetables with plain water to remove surface pesticide residues and other impurities, such as soil particles.

Use a brush to scrub thick-skinned produce, if desired.

Beware of CROSS-CONTAMINATION! It's crucial to:

Keep raw products separate from ready-to-serve foods.

After each contact with a potentially hazardous food, wash, rinse, and sanitize cutting boards, knives, and other food-contact surfaces.

Discard any leftover batter, breading, or marinade after it has been used for potentially hazardous foods.

ACTIVITY:

Use Teaching Aids 5.20 and 5.20a, "Central Kitchen Chicken." This is a case study. See Teaching Aid 5.20 for instructions. Use Teaching Aid 5.20a as a visual or handout.

• Step 5: Cooking

TEXT:

Even when potentially hazardous foods are properly thawed, bacteria and other contaminants may still be present. Cooking foods to the proper internal temperature will kill any existing bacteria and make food safe.

It's important to remember, however, that conventional cooking procedures cannot destroy bacterial spores nor inactivate their toxins.

VISUAL OR HANDOUT:

Use Teaching Aid 5.21, "Tips for Cooking Safely."

TEXT:

Keep in mind the following "safe cooking" tips:

Stir foods cooked in deep pots frequently to ensure thorough cooking.

When deep frying potentially hazardous foods, make sure fryers are not overloaded. Also make sure the oil temperature returns to the required level before adding the next batch.

Regulate size and thickness of each portion to make cooking time predictable and uniform.

Allow cooking equipment to heat up between batches.

Never interrupt the cooking process. Partially cooking poultry or meat, for example, may produce conditions that encourage bacterial growth.

Monitor the accuracy of heating equipment with each use by using thermometers.

In addition, always use a thermometer to ensure food reaches the *proper temperature during cooking*.

Use a sanitized metal-stemmed, numerically scaled thermometer, accurate to plus or minus 2°F.

Check food temperature in several places, especially in the thickest parts, to make sure the food is thoroughly cooked.

To avoid getting a false reading, be careful not to touch the pan or bone with the thermometer.

Always cook food to an internal temperature of 165°F.

VISUAL OR HANDOUT:

Use Teaching Aid 5.22, "Taking Temperature."

TEXT:

TO AVOID CONTAMINATION... Remember that *cooked* doesn't always mean safe. Like cold prepared foods, cooked foods can be easily recontaminated. Always use clean, sanitary cooking utensils and cutting boards, and never touch any prepared food with bare hands!

ACTIVITY:

Use Teaching Aid 5.23, "Hands-On Temperature Taking." This is a group activity.

• Step 6: Serving and Holding

ACTIVITY: Use Teaching Aids 5.24 and 5.24a, "A One-Server Show." This is a case study. See Teaching Aid 5.24 for instructions; use 5.24a as a visual or handout for the class to follow.

Keeping Hot Foods HOT and Cold Foods COLD

VISUAL OR HANDOUT: Use Teaching Aid 5.25, "Keeping Hot Foods Hot and Cold Foods Cold."

TEXT: Just because food has been cooked, it isn't necessarily *safe*. In fact, many outbreaks occur because improper procedures were used *following* cooking.

Although it may be tempting to hold food at temperatures just hot enough to serve, it is essential to keep prepared foods OUT of the "temperature danger zone." Specifically this means:

Always keep HOT foods in hot holding equipment above 140°F.

Always keep COLD foods in a refrigeration unit or surrounded by ice below 40°F.

For safer serving and holding:

Use hot holding equipment, such as steam tables and hot food carts, *during service* but *never for reheating*.

Stir foods at reasonable intervals to ensure even heating.

Check temperatures with food thermometer repeatedly every 30 minutes. Sanitize thermometer before each use.

Cover hot holding equipment to retain heat and to guard against contamination.

Monitor the temperature of hot holding equipment with each use.

DISCARD any food held in the "temperature danger zone" for more than 4 hours!

TO AVOID CONTAMINATION... Never add *fresh food* to a serving pan containing foods that have already been out for serving!

On the "Front Line"

TEXT:

You've made it! All the foods for the day have been prepared properly and are safe and sound in their hot and cold holding units. But don't let up yet!

Safe food handling is the critical link between safely prepared food and safely eaten food.

VISUAL OR HANDOUT:

Use Teaching Aid 5.26, "On the Front Line."

T E X T :

So remember...

Always wash hands with soap and warm water for at least 20 seconds before serving food.

Use cleaned and sanitized long-handled ladles and spoons so bare hands do not touch food.

Never touch the parts of glasses, cups, plates, or tableware that will come into contact with food.

Never touch the parts of dishes that will come into contact with the customer's mouth.

Wear gloves if serving food by hand.

Cover cuts or infections with bandages, and cover with gloves if on hands.

Discard gloves whenever they touch an unsanitary surface.

Use tongs to dispense rolls and bread, or wear gloves.

Clean and sanitize equipment and utensils thoroughly after each use.

Use lids and sneeze guards to protect prepared food from contamination.

TO AVOID CONTAMINATION... Always wash hands, utensils, and other food-contact surfaces *after* contact with raw meat or poultry and *before* contact with the same food when cooked.

For example, do not reuse a serving pan used to hold raw chicken to serve the same chicken after it's cooked, unless the pan has been thoroughly cleaned and sanitized.

Sanitary Self-Service

VISUAL OR HANDOUT: Use Teaching Aid 5.27, "Sanitary Self-Service."

TEXT: Like workers, *customers* can also act as a source of contamination. Unlike workers, customers — especially children — are generally not educated about food sanitation and may do the following unacceptable practices:

Use the same plate twice.

Touch food with their hands.

Touch the edges of serving dishes.

Sneeze or cough into food.

Pick up foods, such as rolls or carrot sticks, with their fingers.

Eat on the food line.

Dip their fingers into foods to taste them.

Return food items to avoid waste.

Put their head under sneeze guards to reach items in the back.

BE SURE TO… *observe* customer behavior and *remove* any foods that may have been contaminated.

Also, as a precautionary measure, serve sealed packages of crackers, breadsticks, and condiments. And, pre-wrap sandwiches if possible.

ACTIVITY: Use Teaching Aid 5.28, "How's the Service?" This is a group activity.

• Step 7: Cooling

TEXT: Now let's look at Step 7, cooling. Here, as at other critical points, every move you make can mean the difference between safe and unsafe.

Just when you thought you were safe...

It is often necessary to prepare foods in advance or use leftover foods. Unfortunately, this can easily lead to problems unless proper precautions are taken.

In fact, problems at this stage are the *number one cause* of foodborne illness.

The *two key precautions* for preventing foodborne illness at this point in the process are *rapid cooling* and *protection from contamination*.

VISUAL OR HANDOUT: Use Teaching Aid 5.29, "Just When You Thought You Were Safe."

Chilling It Quickly

TEXT: All potentially hazardous cooked leftovers should be chilled to an internal temperature below 40°F.

Quick-chill any leftovers larger than ½ gallon or 2 pounds.

VISUAL OR HANDOUT: Use Teaching Aid 5.30, "Chilling It Quickly."

TEXT: **Quick-chilling involves five simple steps:**

1. **Reduce food mass.** Smaller amounts of food will chill more quickly than larger amounts, so cut large items into pieces or divide food among several containers or shallow pans.

   Use shallow, pre-chilled pans (no more than 4 inches deep). Use stainless steel containers when possible; stainless steel transfers heat better and cools faster than plastic.

2. **Chill.** Ideally, place food in an ice-water bath or quick-chill unit (26°F to 32°F) rather than a refrigerator. These options are best for two reasons:

   First, water is a much better heat conductor than air. As a result, foods can cool much more quickly in an ice bath than they can in a refrigerator.

   Second, refrigeration units are designed to keep cold foods cold rather than to chill hot foods. They can take too long to cool foods to safe temperatures.

Another option is to pre-chill foods in a freezer for about 30 minutes before refrigerating. Separate food items so air can flow freely around them. Do not stack shallow pans.

NEVER cool at room temperature.

3. **Stir frequently.** Stirring accelerates cooling and helps to ensure that cold air reaches all parts of the food.

4. **Measure temperature periodically.** Food should reach a temperature of 70°F within 2 hours and 40°F within 4 hours. It's important to note that *this time must be reduced* if food has already spent time in the "temperature danger zone" at any other point in the preparation and serving process.

5. **Tightly cover and label cooled foods.** On labels, include preparation dates and times.

TO AVOID CONTAMINATION…Foods should be covered. Although uncovered foods cool faster, be aware that they are *at increased risk* for cross-contamination.

Be sure to store cooked foods on the upper shelves of the cooler. *Never* store them beneath raw foods.

ACTIVITY: Use Teaching Aid 5.31, "Shallower Is Smarter." This is a demonstration.

• Step 8: Reheating

TEXT:

Reheating, you're in the home stretch. But don't let your guard down!

Why not, you might ask? If you've done everything properly, in preparing, cooking, cooling, and storing the food, can't you just assume that the leftovers are safe? We've all eaten a piece of cold chicken out of the refrigerator, haven't we?

While assuming leftovers are safe might seem appropriate, it's not. In reheating and serving leftovers — just as in all phases of the food preparation process — you must be careful to avoid contamination.

VISUAL OR HANDOUT:

Use Teaching Aid 5.32, "Reheating."

TEXT:

To safely reheat and serve leftovers, be sure to:

Boil sauces, soups, and gravies, and heat other foods to a minimum of 165°F within 2 hours of taking the food out of the refrigerator.

Never reheat food in hot-holding equipment.

Never mix a leftover batch of food with a fresh batch of food.

Avoid keeping refrigerated leftovers for more than 4 to 7 days from preparation date. While storing leftovers, be sure refrigerator temperature is between 41°F and 45°F.

Teaching Aids to Use With Chapter 5: "HACCP – Total Process Prevention"

What is HACCP?

HACCP stands for the Hazard Analysis and Critical Control Point system. It is a system for monitoring the food service process to reduce the risk of foodborne illness.

HACCP focuses on how food flows through the food service process — from purchasing through serving. There are a variety of potential hazards at each step.

By identifying "critical control points" (CCPs) where bacteria may grow or food may be contaminated, HACCP provides managers with a framework for implementing control procedures for each identified hazard.

Teaching Aid 5.1 - "What is HACCP?"

Steps in the Food Service Process

1. Purchasing
2. Receiving
3. Storing
4. Preparing
5. Cooking
6. Serving and holding
7. Cooling
8. Reheating

Teaching Aid 5.2 - "Steps in the Food Service Process"

Teaching Aid 5.3: "Tracking a Food Through HACCP"

(Instructions for Presenters)

This is a group exercise that will work equally well as a teacher-led activity or in small groups. Here's how to lead it:

1. Distribute Teaching Aid 5.2 or project it on a screen.

2. Have the employees select a food they commonly serve.

3. Ask them to identify what happens to that food at *each* step in the food service process. Prompt them to mention precautions that need to be taken at each step to keep the food safe and sanitary. Remind them of the three Cs: Clean, Cold, and Cooked.

Here's an example...

Employees select oven-fried chicken as a food they commonly serve. They go on to list the following as important steps, precautions, or things to keep in mind:

Step 1: Purchasing
Purchase frozen chicken pieces from a reputable supplier who runs a safe and sanitary operation.

Step 2: Receiving
When the chicken is unloaded from the truck, make sure it is Grade A and that the chicken is frozen hard. The temperature should be below 32°F. The chicken should be rejected if it has any evidence of having thawed and refrozen — for example, if there is juice on the case.

Teaching Aid 5.3 - "Tracking a Food Through HACCP" (Instructions for Presenters)

Step 3: Storing
Store the chicken in the refrigerator, below prepared or ready-to-eat foods.

Step 4: Preparing
Coat the chicken in breading immediately before cooking. Wash hands before and after handling the chicken.

Step 5: Cooking
Cook the chicken in the oven to an internal temperature of 165°F.

Step 6: Serving and holding
Hold the chicken at a temperature of at least 140°F. Avoid touching the chicken with hands while serving.

Step 7: Cooling
Cool the chicken in the refrigerator in a shallow container.

Step 8: Reheating
Reheat to an internal temperature of at least 165°F.

Purchasing

Suppliers should...

- Meet federal and state health standards.
- Use the HACCP system in their operations.
- Train their employees in sanitation.
- Use clean delivery trucks with adequate refrigeration and freezer units.
- Package foods in protective, leakproof, durable packaging.

YOU should...

- Let vendors know what you expect from them.
- Put food safety standards in your purchase specification agreement.
- Ask to see vendors' most recent board of health sanitation reports.
- Tell them you will be inspecting trucks on a quarterly basis.

Teaching Aid 5.4 - "Purchasing"

Teaching Aid 5.5: "Examining a Purchase Order"

(Instructions for Presenters)

This is a group activity. Here's how to lead it:

First... Distribute copies of a purchase order or display it on an overhead.

Then... Discuss the food safety standards included on the order and their importance.

Teaching Aid 5.5 - "Examining a Purchase Order" (Instructions for Presenters)

Teaching Aid 5.6: "Safe In, Safe Out"

(Instructions for Presenters)

This is a case study that illustrates the importance of planning ahead and following proper procedures for receiving food. Display or hand out Teaching Aid 5.6a and read the text out loud, or ask a trainee to read it to the group.

The text reads as follows:

> "The delivery truck has just arrived with a variety of foods — some are frozen, some are produce, and some are dry foods. It's almost serving time, so Mary is in a rush to receive and store the foods. At the same time, the dairy's delivery person arrives with the milk.
>
> "As Mary quickly signs for the shipment, she notices that dirt from the milk cases has gotten onto the milk cartons. She thinks about rejecting the milk, but realizes this would leave her without milk to serve to the students as part of the reimbursable meal.
>
> "So Mary accepts the milk and gives a stern warning to the delivery person. She stores the rest of the foods in the appropriate storage areas and washes each milk carton in cold water to remove the soil before storage."

Ask the trainees: "*What did Mary do right? And where did she go wrong?*"

Then lead a group discussion of the answer.

Teaching Aid 5.6 - "Safe In, Safe Out" (Instructions for Presenters)

ANSWER:

What did Mary do right?

She DID put the foods where they should be stored.

What did Mary do wrong?

She DID NOT do the following three things:

1. Check for quality and condition of the incoming foods.
2. Date and label the cases of food.
3. Reject the milk.

If the milk had been acceptable, should she also have dated and labeled it?

NO. Dating and labeling the milk is not necessary.

Ask trainees: "*What can Mary or her supervisor do to PREVENT similar situations in the future?*

ANSWER:

Mary or her supervision can:

1. Ask the vendor to schedule future deliveries for less busy times in the day, such as early in the morning, so emergencies can be properly handled.
2. Also, or alternatively, arrange to have additional staff available when deliveries arrive.
3. Notify the vendor of the dirty milk. Insist that the vendor investigate and alleviate the problem.
4. Have a plan for substituting milk or other menu items in an emergency.

EMPHASIZE:

Failure to follow a good receiving program can lead to uncertain food safety and quality.

A Case Study:
Safe In, Safe Out

The delivery truck has just arrived with a variety of foods — some are frozen, some are produce, and some are dry foods. It's almost serving time, so Mary is in a rush to receive and store the foods. At the same time, the dairy's delivery person arrives with the milk.

As Mary quickly signs for the shipment, she notices that dirt from the milk cases has gotten onto the milk cartons. She thinks about rejecting the milk, but realizes this would leave her without milk to serve to the students as part of the reimbursable meal.

So Mary accepts the milk and gives a stern warning to the delivery person. She stores the rest of the foods in the appropriate storage areas and washes each milk carton in cold water to remove the soil before storage.

Teaching Aid 5.6a - "Safe In, Safe Out"

Guidelines for Receiving

- ✓ Keep sanitary carts handy for transporting goods.
- ✓ Plan ahead for deliveries to ensure sufficient space in refrigerators and freezers.
- ✓ Mark all items for storage with the date of arrival or the "use by" date.
- ✓ Keep the receiving area well lit and free of empty containers, packing material, food particles, and debris.
- ✓ Make sure delivery trucks look and smell clean and are equipped with proper food storage equipment.
- ✓ Check expiration dates of milk, eggs, and other perishable goods.
- ✓ Make sure frozen foods are in air-tight, moisture-proof wrappings.
- ✓ Reject thawed and refrozen food. Look for signs such as large crystals, solid areas of ice, or excessive ice in containers.
- ✓ Reject cans with swollen sides or ends, flawed seals and seams, rust, or dents. Reject any cans whose contents are foamy or bad-smelling.
- ✓ Check temperature of refrigerated and frozen foods.
- ✓ Look for content damage and insect infestations.
- ✓ Reject dairy, bakery, and other foods delivered in flats or crates that are dirty.

Teaching Aid 5.7 - "Guidelines for Receiving"

Judging Meat and Poultry

Meat

- **Quality, Appearance, Texture:**

  USDA inspected. Ask vendor for proof for packaged meats.

  Grading is voluntary.

  Firm and elastic to the touch. Should not feel slimy, sticky, or dry.

- **Temperature:**

  Below 40°F.

- **Signs of spoilage:**

  Brown, green, or purple blotches are signs of microbial attack.

  Black, white, or green spots may indicate molds or freezer burn.

Poultry

- **Quality, Appearance, Texture:**

  Grade A.

  Soft, flabby flesh indicates inferior product.

- **Temperature:**

  Below 40°F.

  Fresh poultry should be delivered surrounded by crushed ice.

- **Signs of spoilage:**

  Purplish or greenish discoloration.

  Abnormal odor.

  Stickiness under wings and around joints.

  Darkened wing tips.

Teaching Aid 5.8 - "Judging Meat and Poultry"

Judging Eggs and Dairy Products

Eggs

- **Quality, Appearance, Texture:**
  Grade A or AA.

  Clean shells without cracks.

  USDA inspected.

- **Temperature:**
  Below 40°F.

  Should be delivered refrigerated.

- **Signs for rejection:**
  Cracked, checked, or dirty shells.

Dairy Products

- **Quality, Appearance, Texture:**
  Pasteurized.

  Grade A milk.

  Sweet taste and smell.

- **Temperature:**
  Below 40°F.

  Should be delivered refrigerated.

- **Signs of spoilage:**
  Sour, moldy taste and/or odor.

Teaching Aid 5.8a - "Judging Eggs and Dairy Products"

Judging Specific Dairy Products

Milk

Quality, Appearance, Texture:
Pasteurized or ultra-pasteurized.
Smooth and fluid.
Tightly sealed cartons.

Temperature:
Below 40° F.
No evidence of freezing – does not retain texture once frozen.

Signs for rejection/spoilage:
Temperature above 40° F.
Putrid odor/off flavor.
Curdled consistency.

Yogurt

Quality, Appearance, Texture:
Pasteurized or ultra-pasteurized.
At least 10 days left after sell date.
Tightly sealed.

Temperature:
Below 40° F.
Ice crystals form when frozen.

Signs of spoilage:
Sour smell.
Mold.

Teaching Aid 5.8b
"Judging Specific Dairy Products"

Butter

Quality, Appearance, Texture:
Smooth, creamy.
Sweet taste.

Temperature:
Below 40° F.
May be successfully frozen.

Signs of spoilage:
Mold.
Off flavor.
Rancid odor.

Ice Cream

Quality, Appearance, Texture:
Tightly sealed.
No evidence of ice crystals indicating it had thawed.

Temperature:
0° F or below.

Signs for rejection:
Large ice crystals indicate a loss of quality.

Teaching Aid 5.8b
"Judging Specific Dairy Products"

Judging Fresh and Frozen Foods

Fresh Produce

- **Quality, Appearance, Texture:**

  Fresh taste.

  Little or no dirt.

  Reasonably unblemished.

  No evidence of mold.

  Firm texture.

- **Temperature:**

  40°F to 65°F.

- **Signs of spoilage:**

  Signs of insect infestation.

Frozen Foods

- **Quality, Appearance, Texture:**

  Packaging intact.

- **Temperature:**

  0°F or below.

  Ice cream may be delivered and stored at 6°F to 10°F.

- **Signs of spoilage:**

  Signs of thawing and refreezing. Look for liquids at bottom of carton or large ice crystals.

Teaching Aid 5.9 - "Judging Fresh and Frozen Foods"

Judging Canned and Dry Foods

Canned Foods

- **Quality, Appearance, Texture:**

  Packaging intact.

- **Signs of spoilage:**

  Swollen, leaking, rusty, or dented cans.

  Flawed seals.

  Abnormal odor, color, or texture.

  Foamy or milky colored liquid that is not natural to the product.

  (REMEMBER… Never taste-test canned foods with these characteristics!)

Dry Foods

- **Quality, Appearance, Texture:**

  Packaging intact.

  Dry and undamaged.

- **Signs of spoilage:**

  Damp or moldy container.

  Insect infestation.

Teaching Aid 5.9a - "Judging Canned and Dry Foods"

Checking Temperatures of Specially Packaged Foods

Eggs

Break one or two eggs into a glass and check temperature with a sanitized thermometer.

Temperature should be below 40° F.

Milk

Open one carton of milk and check temperature with a sanitized thermometer.

Should be below 40° F.

Modified Atmosphere Packaged (MAP) Foods

Hold thermometer tightly between two packages, being careful not to puncture the wrap.

Examine color indicators on the package to see if the product was "temperature-abused" at any point in transit.

If the color indicators do not match, reject the shipment.

Refrigerated items should be at the recommended temperature for the item.

Frozen items should be 0°F or below.

Frozen Entrees

Insert probe of thermometer between the packages in the case, taking care not to pierce interior packages.

Make sure the temperature is not above 0°F.

Teaching Aid 5.10 - "Checking Temperatures of Specially Packaged Foods"

Teaching Aid 5.11: "Real Life" Receiving

(Instructions for Presenters)

This is a group activity that will take place during an actual delivery.

The goal is to have trainees see in a "real life situation" what foods are acceptable, what should be rejected, and why.

Planning ahead...

Schedule a delivery at a time when all employees can attend.

Then, during the delivery...

As each item is unloaded, ask employees whether it should be rejected. Also ask them how each item should be stored if accepted.

Discuss guidelines for accepting or rejecting each food type.

Teaching Aid 5.11 - "Real Life Receiving" (Instructions for Presenters)

Off-Site Feeding

To ensure food safety...

- Use carriers that are approved by NSF *International* for transporting food. Sanitize them daily.
- Make certain the insulating properties are working.
- Be sure trucks are equipped with facilities designed to keep hot foods HOT (above 140°F) and cold foods COLD (below 40°F).
- Use food containers that are: rigid and sectioned, tightly closed, non-porous, and approved to hold food. They should also be easy to clean or disposable.
- Transport an extra sample of hot and cold foods to test their temperatures on arrival.
- Have a 48-hour sample of potentially hazardous food.
- Be ready to store food immediately.

Teaching Aid 5.12 - "Off-Site Feeding"

Ways to Store Food

In general, there are four ways to store food...

- In dry storage
- In refrigeration
- In deep-chilling units
- In a freezer

Teaching Aid 5.13 - "Ways to Store Food"

Guidelines for Dry Storage

- ✓ Make sure the dry storage room is clean, orderly, and well ventilated.
- ✓ Clean up all spills immediately.
- ✓ Do not store trash or garbage cans in food storage areas.
- ✓ Hold dry foods between 50°F and 70°F.
- ✓ Store opened items in tightly covered, labeled containers.
- ✓ Use the "First In, First Out" (FIFO) rotation method and date all packages.
- ✓ Store all items, including paper products, at least 6 inches above the ground.
- ✓ Never use or store cleaning materials or other chemicals where they might contaminate foods!

Teaching Aid 5.14 - "Guidelines for Dry Storage"

Guidelines for Refrigeration

- ✓ Make sure cold air can circulate freely around food. Do not line shelves with foil or paper.
- ✓ Make sure refrigerated foods are dated and properly sealed.
- ✓ Keep food in clean, nonabsorbent, covered containers.
- ✓ Store dairy products separately from foods with strong odors like onions, cabbage, and seafood.
- ✓ Store raw or uncooked food away from and below prepared or ready-to-eat food.
- ✓ Check the temperature of your refrigeration unit regularly to make sure it stays below 40°F. Record temperatures on a chart for EACH refrigeration unit.

Teaching Aid 5.15 - "Guidelines for Refrigeration"

Keeping It Colder

For deep chilling...

- Make sure temperature remains between 26°F and 32°F.
- Keep foods in clean, nonabsorbent, covered containers.

For frozen storage...

- Use your freezer primarily to store foods that are frozen when you receive them.
- Store frozen foods immediately using the "First In, First Out" (FIFO) method.
- Make sure cold air circulates around foods easily.
- Store frozen foods in moisture-proof material or containers to minimize loss of flavor, as well as discoloration, dehydration, and odor absorption.
- Monitor temperature regularly. Record temperature on chart for EACH unit.
- Open freezer doors ONLY when necessary and remove as many items at one time as possible. You can also use a freezer "cold curtain" to help guard against heat gain.

Teaching Aid 5.16 - "Keeping It Colder"

Teaching Aid 5.17: "Inspector for a Day"

(Instructions for Presenters)

This is a group activity that will take place in the dry storage room and allow trainees to play "Inspector for a Day." Here's how to lead it:

To be ready...

You will need the following Teaching Aids: 5.14, "Guidelines for Dry Storage"; 5.15, "Guidelines for Refrigeration"; and 5.16, "Keeping It Colder."

Make enough copies to give each trainee all three teaching aids.

On the day of the activity...

1. Take employees to the dry storage room.
2. Start with Teaching Aid 5.14 and read off the first guideline for dry storage.
3. Have a volunteer make sure the guideline is met.
4. If any problems are found, show the employees how to correct those problems.
5. Discuss the importance of the guideline.
6. Repeat this process for the rest of the guidelines for dry storage. Then, using Teaching Aids 5.15 and 5.16, do the same for the refrigerator, deep chiller, and freezer.

Teaching Aid 5.17 - "Inspector for a Day" (Instructions for Presenters)

Thawing and Marinating

It is CRITICAL to use proper procedures when thawing or marinating foods. Some things to keep in mind...

- **Foods must be KEPT OUT of the "temperature danger zone" (40°F to 140°F).**
- **Some foods, such as hamburger patties, can be cooked from the frozen state.**
- **The two best methods for thawing foods are:**

  In refrigeration at a temperature of 40°F or less, placed in a pan on the lowest shelf so that juices don't drip. OR

  Under clean, drinkable running water at a temperature of 70°F or less for no more than 2 hours.

- **The place to marinate meat, fish, and poultry is in the refrigerator.**
- **Marinade should NEVER be saved and reused.**
- **Cross-contamination can easily occur, so at every step, be careful not to cross-contaminate!**

Teaching Aid 5.18 - "Thawing and Marinating"

Cautions for Cold Foods

For safety's sake, be sure to...

- Chill meats and other ingredients and combine them while chilled.
- Prepare foods no further in advance than necessary.
- Prepare foods in small batches and place in cold storage immediately.
- Hold prepared cold foods at below 40°F.
- Wash fresh fruits and vegetables with plain water. Use a brush to scrub thick-skinned produce, if desired.

And, beware of cross-contamination!

- Keep raw products separate from ready-to-serve foods.
- After each contact with a potentially hazardous food, wash, rinse, and sanitize cutting boards, knives, and other food-contact surfaces.
- Discard any leftover marinade, batter, or breading after it has been used for potentially hazardous foods.

Teaching Aid 5.19 - "Cautions for Cold Foods"

Teaching Aid 5.20: "Central Kitchen Chicken"

(Instructions for Presenters)

This is a case study that illustrates the importance of good personal hygiene and of following proper procedures.

First...

Display or hand out Teaching Aid 5.20a, "Central Kitchen Chicken." Then, have a member of the class read out loud the first part of the case study. The text reads as follows:

"It's Wednesday...

"Marge works for the central kitchen in a large school district. Today, she is preparing chicken salad to be delivered to the other schools for tomorrow's lunch.

"Marge puts the frozen chicken into a pot of boiling water and stews it until done. Although she had a bad cough — and coughed continuously — there was no one else available to help her, so she deboned the chicken herself when it was cool enough to handle."

Then ask trainees: "*Where did Marge go wrong*?"

ANSWER:

She made TWO big mistakes:

1. Boiling frozen chicken is not a proper thawing and cooking technique.

Teaching Aid 5.20 - "Central Kitchen Chicken" (Instructions for Presenters)

2. Marge should not have worked with her cough. She may have infected the chicken with *Staphylococcus* organisms. She should have gone to her supervisor and explained the situation.

Next, have a trainee read part two of the text, which reads as follows:

> "A little later that day...
>
> "After deboning, Marge cools the chicken further at room temperature. She then chops it into pieces and puts the pieces into 12-inch-deep pans. To cool the chicken overnight, she puts the pans in the walk-in refrigerator. She's careful to check the thermometer in the refrigerator, and sees that it registers 45°F."

Ask the trainees: "*Where did Marge go wrong*?"

ANSWER:

She made THREE big mistakes:

1. Chicken should be put into SHALLOW pans, covered, and put in the refrigerator for cooling. Deep pans, like the ones Marge used, keep it from cooling properly.
2. The refrigerator temperature was NOT COLD ENOUGH. It should have been 40°F. As a result, the chicken may not have reached the right temperature quickly enough.
3. Marge never used a thermometer to check the internal temperature of the chicken itself. The temperature of a hazardous product such as this should be below 40°F.

To conclude, ask a trainee to read part three of the text, which reads as follows:

> "The next morning...
>
> "Marge adds the remaining ingredients to the salad. The salad is packed in thermal containers and delivered to the schools between 9:00 and 10:30 a.m. The containers go to the warm classrooms, where they are held until lunch-time (around noon)."

Ask the trainees: "*Was the salad completed and delivered safely*?"

ANSWER:

NO, for several reasons:

1. The chicken was never going to get cooler than the temperature it was when placed into the thermal containers. Storing it in the warm classroom for a couple of hours means it was going to get even warmer. That in itself was dangerous!

2. More than doubling the trouble was Marge's illness. The *Staphylococcus* bacteria from Marge's cough multiplied rapidly, infecting the chicken salad. Marge should not have been working with food.

EMPHASIZE:

Time and temperature principles are essential to safe, sanitary food service. Good personal hygiene is also crucial.

A Case Study:
Central Kitchen Chicken

1) It's Wednesday...

Marge works for the central kitchen in a large school district. Today, she is preparing chicken salad to be delivered to the other schools for tomorrow's lunch.

Marge puts the frozen chicken in a pot of boiling water and stews it until done. Although she had a bad cough — and coughed continuously — there was no one else available to help her, so she deboned the chicken herself when it was cool enough to handle.

2) A little later that day...

After deboning, Marge cools the chicken further at room temperature. She chops it into pieces and puts the pieces into 12-inch deep pans. To cool the chicken overnight, she puts the pans in the walk-in refrigerator. She's careful to check the thermometer of the refrigerator, and sees that it registers 45°F.

3) The next morning...

Marge adds the remaining ingredients to the salad. The salad is packed in thermal containers and delivered to the schools between 9:00 and 10:30 a.m. The containers go to the warm classrooms, where they are held until lunchtime (around noon).

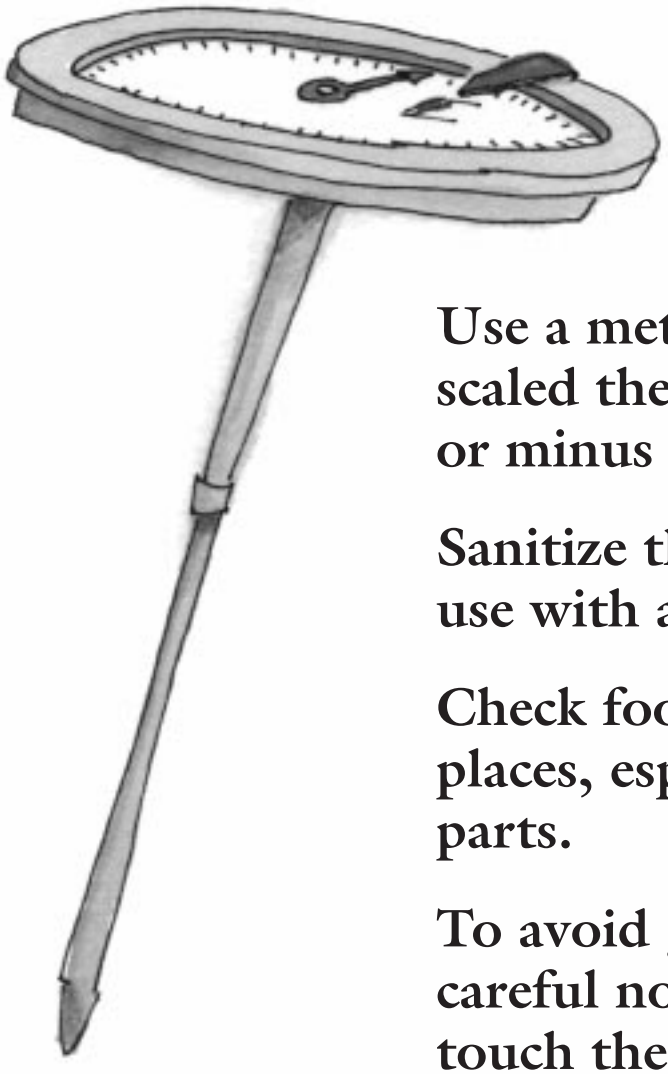
Teaching Aid 5.20a - "Central Kitchen Chicken"

Tips for Cooking Safely

- When using deep pots, stir foods frequently to ensure thorough cooking.
- Don't overload the deep fryer.
- Regulate size and thickness of each portion to make cooking time predictable and uniform.
- Allow cooking equipment to heat up between batches.
- Never interrupt the cooking process.
- Monitor the accuracy of heating equipment with each use by using thermometers.
- Always use sanitized thermometers to ensure foods reach the proper internal temperature during cooking.
- Avoid recontamination!

Teaching Aid 5.21 - "Tips for Cooking Safely"

Taking Temperature



Always check the temperature of foods to make sure they are thoroughly cooked.

Use a metal-stemmed, numerically scaled thermometer, accurate to plus or minus 2°F.

Sanitize the thermometer before each use with a sanitizing solution.

Check food temperature in several places, especially in the thickest parts.

To avoid getting a false reading, be careful not to let the thermometer touch the pan, bone, fat, or gristle.

For poultry, insert the tip into the thick part of the thigh next to the body.

Teaching Aid 5.22 - "Taking Temperature"

Teaching Aid 5.23: "Hands-On Temperature Taking"

(Instructions for Presenters)

This is a group activity which gives trainees experience in taking temperatures.

To be ready, you'll need...

Enough thermometers for each pair of employees to have one to share.

A hot meat dish (preferably containing a bone).

A method to sanitize the thermometers.

Try to schedule this activity for right before a lunch break. To lead it...

1. Demonstrate how to sanitize the thermometers.
2. Demonstrate how to take the temperature correctly.
3. Divide the class into pairs.
4. Have employees practice taking the temperature of the meat.

To give trainees additional practice...

Have them take the temperatures of foods at the various stages in the food service process, including receiving, storing, preparing, cooking, serving and holding, cooling, and reheating.

Teaching Aid 5.23 - "Hands-On Temperature Taking" (Instructions for Presenters)

Teaching Aid 5.24: "A One-Server Show"

(Instructions for Presenters)

This is a case study that shows how easy it is for individual workers to contaminate food while serving if they are not careful.

First, display or hand out Teaching Aid 24a, "A One-Server Show." Read the text out loud or ask a trainee to read it to the group. The text reads as follows:

> "Veronica prepares, serves, and is the cashier for breakfast in a small elementary school. Students go through the line and basically serve themselves. This morning, the ham biscuits were on the baking pan brought to the serving line. They were not pre-wrapped.
>
> "Veronica had finished cashiering and was counting money when some students arriving on a late bus came for their breakfast. Trying to help the students hurry, Veronica put the ham biscuits on their trays for them."

Ask the trainees: "*Where did Veronica go wrong*?"

ANSWER:

Veronica made TWO mistakes:

1. She should have pre-wrapped the ham biscuits to avoid contamination by students coming through the line.
2. Veronica contaminated the ham biscuits she touched by not washing her hands or putting on serving gloves after touching the money.

Teaching Aid 5.24 - "A One-Server Show" (Instructions for Presenters)

A Case Study:
A One-Server Show

Veronica prepares, serves, and is cashier for breakfast in a small elementary school. Students go through the line and basically serve themselves. This morning, the ham biscuits were on the baking pan brought to the serving line. They were not pre-wrapped.

Veronica had finished cashiering and was counting money when some students arriving on a late bus came for their breakfast. Trying to help the students hurry, Veronica put the ham biscuits on their trays for them.

Where did Veronica go wrong?

Teaching Aid 5.24a - "A One-Server Show"

Keeping Hot Foods HOT and Cold Foods COLD

- Always keep HOT foods in hot holding equipment above 140°F.
- Always keep COLD foods in a refrigeration unit or surrounded by ice below 40°F.
- Use hot holding equipment such as steam tables and hot food carts during service but NEVER for reheating.
- Stir foods at reasonable intervals to ensure even heating.
- Check temperatures with food thermometer repeatedly every 30 minutes. Sanitize thermometer before each use.
- Cover hot holding equipment to retain heat and to guard against contamination.
- Monitor the temperature of hot holding equipment with each use.
- Discard any food held at room temperature for more than 2 hours during serving.
- Never add fresh food to a serving pan containing foods that have already been out for serving.

Teaching Aid 5.25 - "Keeping Hot Foods Hot And Cold Foods Cold"

On the Front Line

Be sure to...

- Always wash hands with soap and warm water for at least 20 seconds before serving food.
- Use cleaned and sanitized long-handled ladles and spoons so bare hands do not touch food.
- Never touch food-contact parts of glasses, cups, plates, or tableware. Also never touch the parts that will come in contact with customer's mouth.

Also...

- Wear gloves if serving food by hand.
- Cover cuts or infections with bandages. Cover with gloves if cuts or infections are on hands.
- Discard gloves whenever they touch an unsanitary surface.
- Use tongs to dispense rolls and bread, or wear gloves.

And...

- Clean and sanitize equipment and utensils thoroughly after each use.
- Use lids and sneeze guards to protect prepared food from contamination.
- Wash hands, utensils, and other food-contact surfaces AFTER contact with raw meat or poultry and BEFORE contact with the SAME food when cooked.

Teaching Aid 5.26 - "On the Front Line"

Sanitary Self-Service

Be sure to observe customer behavior and remove any foods that may have been contaminated.

For example, customers may contaminate food by...

- **Using the same plate twice.**
- **Touching food with their hands.**
- **Touching the edges of serving dishes.**
- **Sneezing or coughing into food.**
- **Picking up foods, such as rolls or carrot sticks, with their fingers.**
- **Eating on the food line.**
- **Dipping their fingers into foods to taste them.**
- **Returning food items to avoid waste.**
- **Putting their head under the sneeze guard to reach items in the back.**

Teaching Aid 5.27 - "Sanitary Self-Service"

Teaching Aid 5.28: "How's the Service?"

(Instructions for Presenters)

This is a group activity that gives trainees a chance to learn as they watch each other — and themselves — on the serving line.

To be ready, you'll need...

Foods on the service line that can be discarded after the class, since they may become contaminated.

To do the activity...

1. Ask volunteers to serve food. Ask some to serve appropriately and others to serve inappropriately.

2. Direct volunteers to ask, as they serve: "What's wrong with me?" or "What's right with me?"

3. Have the class summarize what was done appropriately and inappropriately.

Teaching Aid 5.28 - "How's the Service" (Instructions for Presenters)

Just When You Thought You Were Safe

Failing to use proper procedures when preparing foods in advance or when using leftover foods is the *number one* cause of foodborne illness.

To prevent foodborne illness...

- Cool the food *rapidly*.

  Food must reach an internal temperature below 40°F in 2 to 4 hours.

- Protect the food from contamination.

Teaching Aid 5.29 - "Just When You Thought You Were Safe"

Chilling It Quickly

For leftovers in amounts greater than 1/2 gallon or 2 pounds...

- **Reduce food mass.**
- **Chill.**
- **Stir frequently.**
- **Measure temperature periodically.**
- **Tightly cover and label cooled foods. Include preparation dates and times on label.**

Teaching Aid 5.30 - "Chilling It Quickly"

Teaching Aid 5.31: "Shallower is Smarter"

(Instructions for Presenters)

This is a demonstration that makes it easy for trainees to remember that SHALLOWER *is* SMARTER.

First, with trainees watching or helping...

1. Pour 2 gallons of 165°F water into a 3-gallon stockpot.
2. Pour 2 gallons of 165°F water into a 4-inch-deep steam table pan.
3. Put the two containers in the refrigerator.
4. Record the temperature of the water in each of the containers every 15 minutes.

Then, explain the importance of dividing leftovers into several shallow pans. Use the following examples to dramatize the different results you can get by using this approach.

Begin by telling trainees...

If 12 gallons of stew are put in the refrigerator in a large stock pot, it can take *36 hours* to cool from 140°F to 50°F.

For contrast, continue with...

If two 6-gallon containers of stew are placed in an ice bath and stirred, it takes only *1 hour* to take them from 140°F to 75°F.

And, using a similar example...

If the stew is 2 inches deep, it takes *2 hours* to cool from 75°F to 40°F. If the stew is 4 inches deep, it takes *8 hours*. And, if the stew is 8 inches deep, it takes *32 hours*.

Teaching Aid 5.31 - "Shallower is Smarter" (Instructions for Presenters)

Reheating

To ensure food safety...

- Boil sauces, soups, and gravies, and heat other foods to a minimum of 165°F within 2 hours of taking the food out of the refrigerator.
- Never reheat food in hot-holding equipment.
- Never mix a left-over batch of food with a fresh batch of food.
- Never reheat food more than once.
- Keep refrigerated leftovers no longer than 10 days.

Teaching Aid 5.32
"Reheating"

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